

Safe *and* Permanent Frame Construction



Illustrating

FIFTEEN POINTS of Good
Construction, incorporated
in the MODEL HOUSE
now being erected at
MIAMI, FLORIDA



Southern Pine Association
NEW ORLEANS, LOUISIANA

THE Fifteen Points of good construction are incorporated in a house erected by the Southern Pine Association in Miami, Florida, with the co-operation of the Miami Lumbermen's Credit Bureau, the Miami Chapter of Associated General Contractors and The Architectural League of Greater Miami.

Foreword

THAT safe and permanent construction is essential in house building has been established, but the methods best used often are open to conjecture. New plans and systems frequently have been projected, but when given trial under the stress of storms have proved ineffective. The old common sense methods that always have been considered good practice have not been improved upon, and when conscientiously applied assure success.

In considering the application of these common sense methods to building construction, it has been found that a few cardinal points stand out as absolutely necessary to permanency. These methods, when followed in actual construction, assure a generally successful building, and at the same time, make essential and easy of fulfillment innumerable lesser points which on first thought might have been confused with the major details.

In choosing well founded construction details the possibility of a great divergence of opinion is assumed, but this is untrue if attention is turned to the cardinal points which must be incorporated to assure permanency as demonstrated by years of use.

An inexpensive house may be built just as substantially as a house costing many times as much. The construction details of either are similar. The more expensive house is usually

built by an experienced contractor under the direction of a well trained architect, and to that extent is more likely to be built right, but the application of the same principles of construction to the smaller structure will provide an equally well built house.

The employment of a well trained architect is always advisable when financially practical, but the employment of a reputable and experienced contractor is an absolute necessity. To assume that the standards of construction of all builders are the same and that the construction of a house of whatever cost will be thorough and efficient is unfair to yourself and to the builder who bases his contract price on honest work. The lowest bidder may be figuring on some of the construction short-cuts he calls general practice.

A thorough understanding of the important construction details outlined in this booklet and divided into fifteen cardinal points will furnish a guide for discussion with your contractor of approved methods of construction and for the inspection of the work as it progresses.



Fifteen Cardinal Points of Safe and Permanent Construction

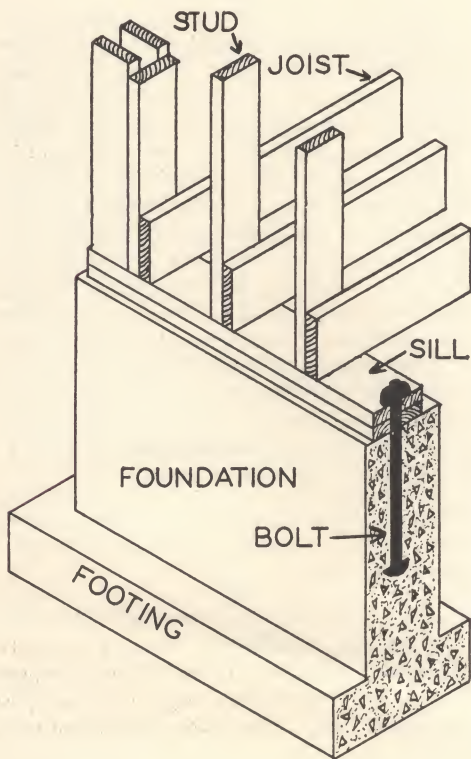


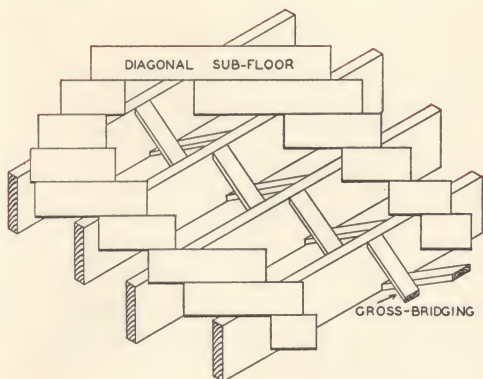
1. The foundation footing (the enlarged base of a foundation) is often omitted or is inadequate because it is not considered essential. This is a serious omission as the entire weight of a building is distributed over the ground by footings. Should they be omitted or be made too small, the weight of the building is often too great for the ground it is transmitted to, resulting in uneven settlement of the building shown by cracks in the foundation, slanting floors and cracked plaster. Even in small houses the foundation footing should extend at least 6 inches beyond the wall on both sides and be at least 8 inches deep. The bottom of the footing should be flat and level and carried below the deepest frost line and at least 12 inches above the finished grade.

Wherever footings pass over trenches holding service pipes, they should be enlarged or reinforced with steel.

Bearing posts which carry the load in the center of a building should have footings 8 to 12 inches deep and from 18 to 24 inches square and be built up slightly larger than the post to a point 2 or 3 inches above the finished basement floor.

2. The weight of a building is not sufficient to hold it on the foundation in winds of unusual intensity. It is necessary that a 2 to 4 inch thick sill be bolted to the foundation to which the house may be secured. The bolts

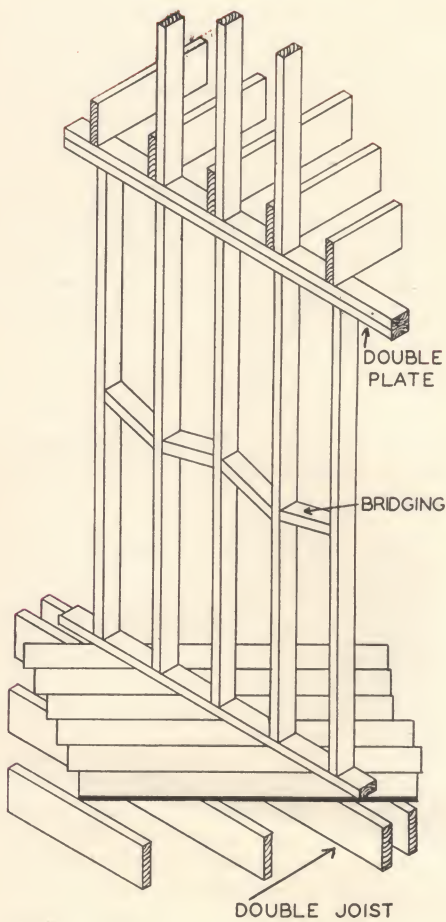




should be $\frac{3}{4}$ inch in diameter, placed every 8 feet and extend 18 inches or 2 feet into the foundation.

3. Floor joists furnish the support for the floors and contents of a building. They should be placed not more than 16 inches apart and should have sufficient strength to carry the load without bending so far as to crack the plaster. Cross bridging should be placed at least every 8 feet in the length of the joist so that the floor will be rigid and stiff.

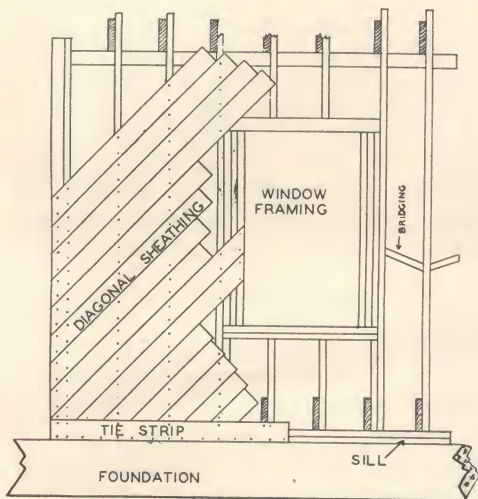
4. Studs in outside walls should be placed not more than 16 inches apart and should be continuous the full height of the wall. When they support second story joists they should have a continuous ribbon notched into them and have the joists securely spiked to their sides. Single



bridging should be placed between studs in the middle of each story height.

5. First floor joists and outside wall studs should be effectively tied to the sill bolted to the foundation by a single strip of horizontal sheathing running completely around the building and securely spiked to sill, studding and joists. Plates may be used in place of the single strip of sheathing if they are cut in between joists and spiked to sill, joists and studs.

6. All corners shall be strengthened by placing braces at an angle of 45 degrees which shall be reversed in direction in extreme corners of same



side wall. This will transmit strains to the foundation without rupturing the building.

7. Sheathing (preferably 1x6 inch dressed and matched) shall be applied to all outside walls at an angle of 45 degrees. This will distribute wind strains throughout the entire side wall without distortion of the building.

8. Heavy waterproof felt shall be applied directly to the diagonal sheathing of all outside walls and tightly fitted and fastened around openings. This will permit full advantage to be gained of the unsurpassed insulating value of lumber. No other insulating material need be used.

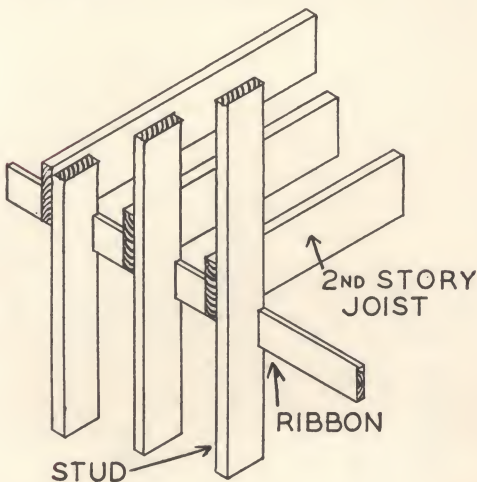
9. Sub-flooring (preferably of 1x6 dressed and matched) shall be laid at an angle of 45 degrees with joists and carried in between studs to outside wall sheathing. The direction of the sub-floor should be opposite on each floor. Sub-flooring should not be omitted or carelessly laid as it provides lateral bracing to the building and furnishes a rigid nailing base that eliminates squeaking in finished floors.

10. Two joists should be placed under partitions which carry a load from the floor above. These joists should be separated by solid wood bridging so that service pipes may enter the partition without dangerous cutting of the joists.

11. At least one partition meeting each outside wall somewhere near its center shall be braced and securely tied to the outside wall to

add lateral stiffness to the building through the center in all directions.

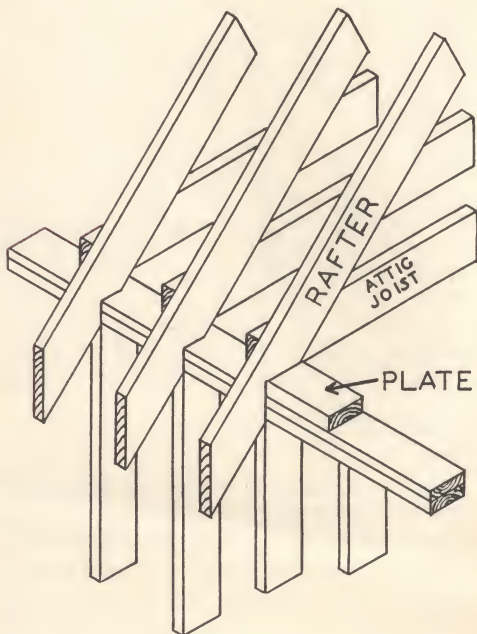
12. All partitions which carry a load from the floor above shall have a double cap plate and shall have a single row of bridging placed at center of story height. This supplies the necessary stability to the inside framing of the building.



13. It is necessary to double the studs at the sides, top and bottom of all window and door openings to supply the strength removed by the cutting of one or more studs. In walls carrying floor loads above openings and over all openings more than 3 feet wide, it is necessary to provide

the required strength by forming trusses over the openings. This will prevent distortion of the opening resulting in cracks in plaster or causing doors and windows to stick.

14. Roof rafters shall be anchored to walls by spiking 2 inch plates between rafters and securely spiking the rafters to these plates. This will furnish an adequate tie between the roof framing and the side walls, a point of weakness in most houses.



15. Diagonal braces nailed to the underside of roof rafters starting at the center of the ridge and extending to the corners will prevent the roof from having a sway-back appearance. This bracing, together with braces run from rafter to rafter at about the middle of the attic height at every fourth rafter will furnish the required stiffness that will enable a roof to successfully weather the severe strains of unusual winds.

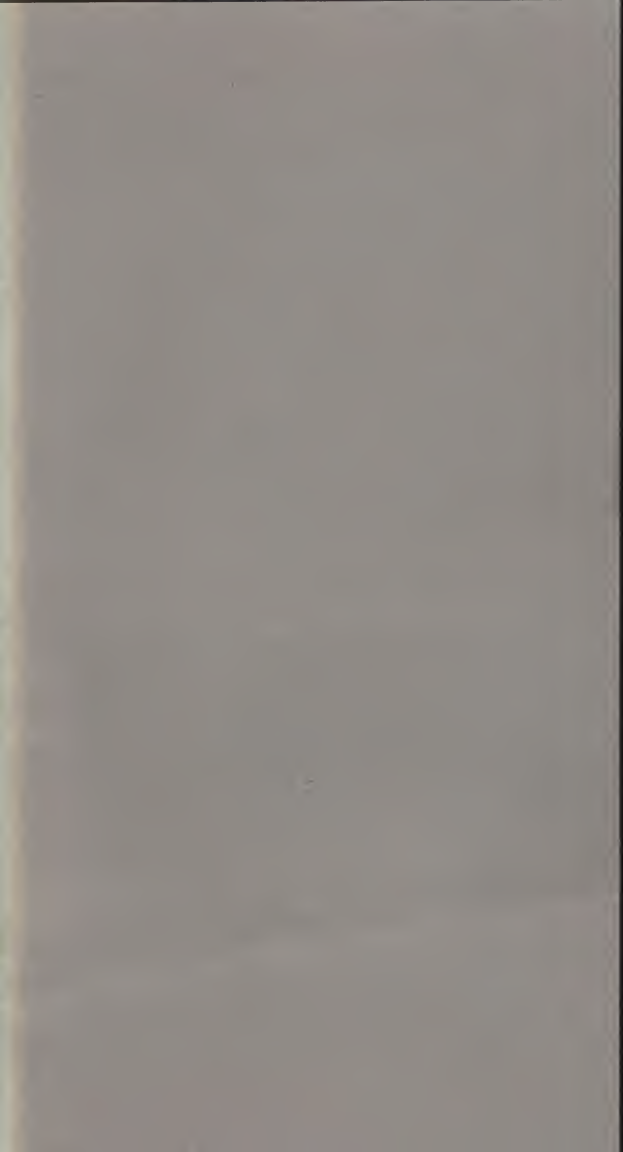


You Will Want This New Book, Also

A HOME BUILDER'S MANUAL of good construction based on the fifteen cardinal points as exemplified in the model house being built by the Southern Pine Association at Miami, Florida, will be published on completion of the structure. This manual will be distinctive in that it will include actual photographs of these construction details as carried out. Well defined illustrations and an easily understood text will make it interesting and valuable to every person considering building or buying a home. *Write for it.*



Southern Pine Association
NEW ORLEANS, LOUISIANA



*These letters at the right of "SPA" identify the grade. The designation here is one of 18 grade-marks appearing on lumber from Southern Pine Association mills.

